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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/676,086	10/02/2003	Yasuyuki Saito	03560.003368	7763
5514	7590	03/10/2006	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			RIELLEY, ELIZABETH A	
			ART UNIT	PAPER NUMBER
			2879	

DATE MAILED: 03/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/676,086

Applicant(s)

SAITO ET AL.

Examiner

Elizabeth A. Rielley

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9 and 14-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9 and 14-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

Amendment filed 12/20/05 has been entered and considered by the Examiner. Claims 1-8 and 10-13 are cancelled; claims 14-16 have been added. Currently, claims 9 and 14-16 are pending in the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba et al (US 6638403) in view of Garvey et al (US 6797336).

In regard to claim 9, Inaba et al ('403) teach a deposition apparatus (figure 11) for carbon fiber comprising: a first chamber (not numbered; column 3 line 34 to column 4 line 16); a transporting tube (33; column 9 line 24 to column 10 line 30); a second chamber (6) communicated to said first chamber (not numbered) through said transporting tube (33); an electrode (2) containing carbon (1; column 3 lines 49-50) disposed within said first chamber (not numbered); an electrode (2) containing carbon (1; column 3 lines 49-50) disposed within said first chamber (not numbered); and an additional electrode (4) for

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producing an arc discharge (5). Inaba et al ('403) are silent regarding the limitations that the first electrode is an anode and the second electrode is a cathode which is disposed facing the anode and a pressure control means for keeping the pressure in said first chamber greater than the pressure in said second chamber. Garvey et al ('336) disclose a deposition apparatus (figure 1) that comprises an anode (34; column 6 lines 4-19) containing carbon (column 17 lines 22-24) disposed within said first chamber; a cathode (36) disposed within said first chamber (79), facing said anode containing carbon (see figure 1); and pressure control means for keeping the pressure in said first chamber greater than the pressure in said second chamber (not numbered; column 6 lines 16-19) in order to simplify the process of coating thin films of nano-sized particles (column 3 lines 28-30). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the deposition apparatus of Inaba et al with the electrode configuration and transportation means of Garvey et al. Motivation to combine would be to simplify the process of coating thin films of nano-sized particles.

In regard to claim 14, Inaba et al ('403) continue to teach a conduit (33) with a nozzle (30, 26; column 8 line 65 to column 9 line 15).

Claims 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inaba et al (US 6638403) in view of Garvey et al (US 6797336) as applied to claims 9 and 14 above, and further in view of Ishikura et al (JP 2000-208033).

In regard to claim 15, Inaba/Garvey teach all the limitations set forth, as described above, except that a heater is included in the nozzle. Ishikura et al ('033) teach a heater included in a nozzle (paragraph 41) in order to avoid clogging the nozzle and connecting tube (paragraph 41). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the apparitions of

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Inaba/Garvey with the heating device of Ishikura. Motivation to combine would be to avoid clogging the nozzle and the connecting tube.

In regard to claim 16, Ishikura et al ('033) continues to teach an inert gas (abstract) introducing unit for introducing an inert gas to a first chamber (see figure 1; "gas"; paragraphs 39-42), and a gas exhaust unit exhausting said inert gas from a second chamber (see figure 1; "vacuum pump"; paragraph 64), wherein a suction opening of the transporting tube is disposed above an electrode in a first chamber ("evaporation source"; see figure 1), and a substrate facing the nozzle is disposed in a second chamber (see figure 1); and fiber is transported along with the inert gas in the transporting tube and ejected from the nozzle (abstract) in order to increase the rate of production of the applied layer (abstract). Hence, it would have been obvious at the time of the invention to one of ordinary skill in the art to combine the apparatus, including the anodes and carbon fiber deposition method as described above, of Inaba/Garvey with the gas units of Ishikura et al ('033). Motivation to combine would be to improve the rate of production of the applied layer.

Response to Arguments

Applicant's arguments filed 12/20/05 have been fully considered but they are not persuasive. In regard to Applicant's arguments that the Prior Art of record fails to teach a depositing apparatus to deposit a carbon fibers on a substrate, providing a pressure difference between the duct and the processing chamber, orienting the anode below the duct, and a transporting tube for transporting a carbon fiber via the difference in pressure (i.e.: a suction method), the Examiner respectfully disagrees. Inaba teaches an apparatus to deposit carbon fiber onto a substrate (column 3 line 34 to column 4 line 10) using two chambers and a transporting tube, the transporting tube located over the electrode (see figure 11; column

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9 line 25 to column 11 line 55). Garvey teaches the electrode is an anode (34; column 6 lines 4-19). Ishikura teaches a suction method (i.e.: using the difference in pressure between the two chambers) to transport a substance from one chamber to the next in order to increase the rate of production (abstract). Therefore, the Prior Art of record does indeed teach the claimed limitations.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Motio et al (US 6017259) teaches of a similar manner in which to coat a substrate.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

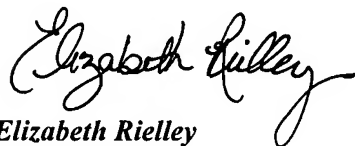
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elizabeth A. Rielley whose telephone number is 571-272-2117. The examiner can normally be reached on Monday - Friday 7:30 - 4:00.

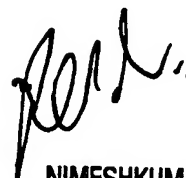
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elizabeth Rielley

Examiner
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